

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application. Added text is indicated by underlining, deleted text is indicated by ~~striketrough~~. Changes are identified by a change bar in the margin.

Listing of Claims:

1-9. (canceled)

10. (previously presented) A method of operating a storage system,
wherein when a storage system detects that an amount free space of the storage
system has become less than a predetermined value, a remote storage area is provided by
performing a mount operation on one or more disk units at a remote storage system in
communication with said storage system so that said remote storage area serves as said storage
area,
wherein a size and a speed of at least one of reading and writing of said remote
storage area to be utilized are specified in a utilization demand message from said storage system
to said remote storage system that identifies a predetermined port ID of the storage system, and
wherein said remote storage system determines if said remote storage area can be
provided in accordance with said size and speed, and if it is possible, sends a data packet from
the remote storage system to the storage system, said data packet identifying a remote unit ID of
the remote storage area that is to be stored in a port management table of the storage system in
accordance with the port ID identified in the utilization demand message and thereby mounting
said remote storage area and providing said remote storage area having said size and said speed
as the storage area for said storage system.

11. (previously presented) A method of operating a storage system,
wherein when a storage system detects that an amount of its free space has
become less than a predetermined value, a remote storage area is provided by performing a

4 mount operation on one or more disk units at a remote storage system in communication with
5 said storage system so that said remote storage area serves as said storage area,

6 wherein a utilization state of said remote storage area for said storage system is
7 monitored in said remote storage system, and

8 wherein whether or not one or more spare disk units in said storage system is to
9 be provided is decided according to said utilization state;

10 wherein providing spare disk units comprises sending a data packet from the
11 remote storage system to the storage system, said data packet identifying a remote unit ID of the
12 remote storage area that is to be stored in a port management table of the storage system in
13 accordance with a port ID of the storage system identified in a utilization demand message from
14 the storage system to the remote storage system and thereby mounting said remote storage area
15 and providing said remote storage area having said size and said speed as the storage area for
16 said storage system.

1 12. (currently amended) A method of operating a storage system,
2 wherein when a storage system detects that an amount of its free space has
3 become less than a predetermined value, a remote storage area is provided by determining if it is
4 possible to provide the remote storage area in accordance with a specification of the storage
5 system and, if it is possible, then performing a mount operation on one or more disk units at [[a]]
6 | the remote storage system in communication with said storage system so that said remote storage
7 area serves as said storage area,

8 wherein data stored and managed in said remote storage area is copied to the
9 storage area of said storage system when the storage area of said storage system is enlarged;

10 wherein the mount operation comprises sending a data packet from the remote
11 storage system to the storage system, said data packet identifying a remote unit ID of the remote
12 storage area that is to be stored in a port management table of the storage system in accordance
13 with a port ID of the storage system identified in a utilization demand message from the storage
14 system to the remote storage system, and thereby mounting said remote storage area and

15 providing said remote storage area having said size and said speed as the storage area for said
16 storage system.

13-20. (canceled)

1 21. (currently amended) A method of operating a storage system,
2 wherein when a storage system detects that an amount of free space on at least
3 one first disk unit installed in said storage system has become less than a predetermined value, a
4 remote storage area that is provided by at least one second disk unit installed in a remote storage
5 system in communication with said storage system is made available as said storage area by
6 determining if it is possible to provide said remote storage area in accordance with specifications
7 of the storage system and, if it is possible, then by performing a mounting operation of said at
8 least one second disk unit,

9 wherein said storage system stores a correspondence between:
10 a port ID for specifying each disk unit installed on said storage system, and
11 an identifier of said first disk unit, and
12 wherein, when said storage system uses said remote storage area as its storage
13 area by performing a mounting operation, said storage system stores a correspondence between:
14 said port ID, and
15 an identifier of said second disk unit that is provided by said remote storage
16 system area;

17 wherein a size and speed of at least one of reading and writing of said remote
18 storage area to be utilized are specified in a utilization demand message from said storage system
19 to said remote storage system that identifies a predetermined port ID of the storage system; and

20 wherein the mounting operation comprises sending a data packet from the remote
21 storage system to the storage system, said data packet identifying a remote unit ID of the remote
22 storage area that is to be stored in a port management table of the storage system in accordance
23 with the port ID of the storage system and thereby mounting said remote storage area and
24 providing provides said remote storage area having said size and said speed as the storage area
25 for said storage system.

1 22. (currently amended) A method of operating a storage system, the method
2 comprising:

3 receiving a utilization demand message at a remote storage system, wherein the
4 utilization demand message specifies a size and a speed of at least one of reading and writing of
5 a remote storage area of the remote storage system and that identifies a predetermined port ID of
6 the storage system;

7 determining if it is possible for the remote storage system to provide a remote
8 storage area to the storage system in accordance with the utilization demand message
9 specification of size and speed;

10 performing a mount operation on one or more disk units at the remote storage
11 system so that said remote mounted disk units serve as additional storage area for the storage
12 system, in response to determining that it is possible to provide said remote storage area, and
13 otherwise indicating that no mount operation could be performed;

14 wherein the mount operation comprises sending a data packet from the remote
15 storage system to the storage system, said data packet identifying a remote unit ID of the remote
16 storage area that is to be stored in a port management table of the storage system in accordance
17 with the port ID of the storage system and thereby mounting said remote storage area and
18 providing ~~provides~~ said remote storage area having said size and said speed as the storage area
19 for said storage system.

1 23. (previously presented) A method of operating a storage system according
2 to claim 22, wherein the designation command designates a port ID of the storage system, to
3 which the remote storage area will be mounted.

1 24. (previously presented) A method of operating a storage system according
2 to claim 22, further comprising:

3 providing a remote unit ID to the storage system, wherein the remote unit ID
4 identifies the remote storage area of the performed mount operation.

1 25. (previously presented) A method of operating a storage system according
2 to claim 22, wherein the remote unit is automatically mounted in response to detecting that an
3 amount of free space of the storage system has become less than a predetermined value.

1 26. (new) A method of operating a storage system according to claim 22,
2 wherein the utilization demand message specifies a write-in command for writing data to a
3 remote storage area of the remote storage system, the method further comprising:
4 writing the data to the remote storage area designated by the remote unit ID;
5 indicating that the write-in command was normally completed if the write-in
6 command was performed normally, and otherwise indicating that the write-in command was not
7 performed normally.

1 27. (new) A method of operating a storage system according to claim 22,
2 wherein the utilization demand message specifies a read-out command for reading data from a
3 remote storage area of the remote storage system, the method further comprising:
4 reading the data from the remote storage area designated by the remote unit ID;
5 indicating that the read-out in command was normally completed if the read-out
6 command was performed normally, and otherwise indicating that the read-out command was not
7 performed normally.

1 28. (new) A system comprising:
2 a storage system coupled to a computer; and
3 a remote storage system coupled to said storage system;
4 wherein said storage system comprises:
5 a computer interface in communication with a host computer,
6 a cache memory,
7 a plurality of disk units for data storage, and
8 a disk adapter coupled to said plurality of disk units;

9 wherein the storage system provides a utilization demand message that is received
10 at the remote storage system, wherein the utilization demand message specifies a size and a
11 speed of at least one of reading and writing of a remote storage area of the remote storage system
12 and that identifies a predetermined port ID of the storage system, the remote storage system
13 determines if it is possible for the remote storage system to provide a remote storage area to the
14 storage system in accordance with the utilization demand message specification of size and
15 speed, and performs a mount operation on one or more disk units at the remote storage system so
16 that said remote mounted disk units serve as additional storage area for the storage system, in
17 response to determining that it is possible to provide said remote storage area, and otherwise
18 indicates that no mount operation could be performed, wherein the mount operation comprises
19 sending a data packet from the remote storage system to the storage system, said data packet
20 identifying a remote unit ID of the remote storage area that is to be stored in a port management
21 table of the storage system in accordance with the port ID of the storage system and thereby
22 mounting said remote storage area and providing said remote storage area having said size and
23 said speed as the storage area for said storage system.